Nigerian Journal of Clinical Practice
March 2007 Vol 10 (1) 15-18

OBSTETRIC OUTCOME OF TWIN PREGNANCIES IN JOS, NIGERIA

JT Mutihir, VC Pam,
Department of Obstetrics and Gynaecology, Jos University Teaching Hospital, Jos, Nigeria.

ABSTRACT

Objectives: The objectives of the study were to determine the incidence, maternal and foetal outcome of twin delivery in Jos, Nigeria.

Methodology: All consecutive twin deliveries between August 2003 and November 2004 were studied. Data obtained at the time of delivery included maternal age, parity, gestational age at the time of delivery, foetal Apgar scores at birth, gender/sex and foetal weights.

Results: A total of 3,420 deliveries were conducted and 75 were twin deliveries constituting 2.3%, or 1 in 43 deliveries. The mean age and parity of mothers were 28.96 and 3.20 respectively. Male infants constituted 54.7% of the twins with a sex ratio of 1.206 boys to 1.0 girls. Among the twin deliveries, presentation of cephalic-cephalic for the first and second twins was the most common, (48.0%). Male-male twin pair occurred in 33.3%, male-female twins in 22.7%, female-female in 24%, while female-male twins occurred in 20.0%. Males were first twin in 56.0% and second twin in 53.4%; while females were first twin in 44.0% and second twin in 46.6% of the cases. Caesarean section rate was 41.3% in the overall twin pregnancies. Perinatal mortality was 91 per 1000 deliveries.

Conclusion: The incidence of twin pregnancy in Jos is high. The commonest maternal morbidity was preterm labour and delivery. Foetal low birth weight was present in about three quarters of the infants. Perinatal mortality rate was expectedly increased in the study. Close antenatal and perinatal assessment and care need be given to mothers of twin pregnancies in order to reduce the maternal and foetal complications.

Key words: Pegnancy, twins, perinatal mortality, Jos. (*Accepted 21 April 2006*)

INTRODUCTION

Twin pregnancies are high risk pregnancies. Maternal and foetal complications are common in twin pregnancies. Maternal obstetric complications include preterm labour, anaemia, pregnancy induced hypertension, eclampsia, complications of labour, and postpartum haemorrhage amongst others. Foetal complications include prematurity, low birth weight and perinatal mortality. The perinatal mortality rate associated with twin pregnancy is 4-times that with singleton pregnancy and is related to the higher incidences of foetal growth restriction, preterm delivery, antepartum haemorrhage, maternal pre-eclampsia and foetal anomaly[1]. Intrauterine growth restriction occurs in up to 2/3 of twins[2]. It may occur in both twins. Early diagnosis affords the clinician a better opportunity to manage this high risk pregnancy better with effective antental and intrapartum foetal surveillance.

Correspondence: Dr J T Mutihr
E-mail: jtmutihir01@yahoo.co.uk

The incidence of twin pregnancy varies widely with about 1 in 155 pregnancies in Asian women, 1 in 100 in Caucasian women, and 1 in 80 in black women[2,3].
The use of fertility drugs for the induction of ovulation could result in multiple pregnancies thereby increasing the incidence of twin pregnancies.The commonest presentation in twin pregnancy is vertex-vertex presentation and occurs in up to 45%[5]. The less common causes of perinatal death are foetal distress, discordancy among the twins and retained second twin.
There is the dearth of information about twinning in Jos. The aims of this study are to determine the incidence, maternal and foetal outcome of twin pregnancies in our environment, the Jos Plateau of Nigeria. It is hoped that the findings will guide our obstetricians in the management of twin pregnancies.

PATIENTS AND METHODS

This was a prospective study from August 2003 to November 2004 (16 months). All consecutive twin

deliveries within the period of study were recruited. The gestational age of the pregnancy was estimated using the last normal menstrual period of the mothers at the beginning of the pregnancy. Those that were unsure of dates had ultrasound scanning ordered for to assist with the estimation of the fetal gestational age, and to confirm twin pregnancy. Information obtained from the delivery room at the time of delivery included maternal age, parity, gestational age at the time of delivery, foetal Apgar score at birth, gender/sex, foetal weight, and perinatal death record. Data was analyzed using the Epi-Info 2002 software

RESULTS

A total of 3,420 deliveries were conducted at the maternity, and 75 of them were twin deliveries, constituting 2.3%, or 1 in 43 deliveries. The age of the patients ranged from 15-43 years while the parity of the mothers ranged from 1 to 12. The mean age and parity of mothers of twin pregnancies was 29.0 years, and 3.2, respectively, Tables 1 and 2. The booking status of the women showed that there were 57 (76.0%) patients who booked in our antenatal clinic, 15 (20%) booked elsewhere but referred to the hospital for delivery, and 3 (4.0%) had no form of antenatal care.

The gestational age at delivery ranged from 24 to 42 weeks with a mean of 36.95 weeks. About 34.7% of the deliveries occurred before term, and none of them went post-term (Table 3).

Estimated blood loss ranged from 150 2000 ml with an average of 448 ml. The average blood loss for patients with spontaneous vaginal delivery ranged from 150 2000 ml with a mean of 313.4 ml, and those who had caesarean section ranged from 200 1400 ml with a mean of 625.8 ml. The blood loss in those who had caesarean delivery was higher than those who had vaginal delivery, and this was statistically significant (p-value = 0.0030). Twenty five (33.3%) of the patients had postpartum haemorrhage, blood loss of 500 ml or greater. The caesarean section rate in all the twin pregnancies was 41.3%.

Male infants were more than females in this study giving a sex ratio of 1.206 boys to 1.0 girls (Table 4). The foetal presentation at birth in both twins showed that both twins as cephalic was the commonest, and occurred in 48.0% of cases. Cephalic-breech presentation was seen in 21.3%, breech-breech in 16.0%, and breech-cephalic in 13.7%, (Table 5). Table 6 shows the distribution of sex pair/combination of twins at birth. The male-male pair was commonest and accounted for 33.3% of all the pairs.

Low birth weight was recorded in up to 60% of the infants at birth (Table 7).Perinatal mortality in this study was 91 per 1000 deliveries.

Table 1: **Age distribution of mothers of twin birth**

Age-Group in Years	Total Number (%)
≤19	3 (4.0)
20-24	9 (12.0)
25-29	30 (40.0)
30-34	23 (30.7)
35-39	8 (10.7)
40-44	2 (2.6)
TOTAL	**75 (100.0**

(Mean age of the patients = 29.0)

Table 2: **Parity distribution of mothers of twin deliveries**

Parity	Number (%)
1	16 (21.3)
2-4	42 (56.0)
≥ 5	17 (22.7)
Total	**75 (100.0)**

(Mean parity of the patients = 3.2)

Table 3: **Distribution of gestational age at birth of the twin pregnancies**

Gestational age in weeks	Number (%)
≤ 36	26 (34.7)
37 - 42	9 (65.3)
≥ 43	0 (0.0)
Total	**75 (100.0)**

Mean of the gestational age at the time of labour and delivery = 37.0 weeks, and none of the pregnancies went postdate before the onset of labour)

Table 4: **Gender distribution of twins at birth**

Gender	Total Number (%)
Males	82 (54.7)
Females	68 (45.3)
Sex Ration	1.206:1.0
Total	**150 (100.0)**

Table 5: **Presentations of the first and second twins**

Presentation	Number (%)
Cephalic cephalic	36 (48.0)
Cephalic breech	16 (21.3)
Breech breech	12 (16.0)
Breech cephalic	11 (14.7)
Total	**75 (100.0)**

(Abnormal presentations, any presentation other than cephalic, in the first twin at birth = 30.7%)

Table 6: **Distribution of sex pair/combination of twins at birth**

Gender combination	Total Number (%)
Male-Male	25(33.3)
Male-Female	17(22.7)
Female Female	18 (24.0)
Female -Male	15(20.0)
Total	**75(100.0)**

(Males were first twin in 42 cases, second twin in 40 cases and females were first twin in 33 cases and second twin in 35 cases.)

Table 7: **Weight distribution of the foetuses at birth in JUTH**

Weight Group	Number (%)
Very low birth weight (< 1500 G)	17 (11.3)
Low birth weight (1500-2499 G)	73 (48.7)
Normal birth weight (2500-3999 G)	58 (38.7)
Macrosomia (= 4000 G)	2 (1.3)
Total	**150 (100.0)**

(Mean birth weight of the infants = 2390 G)

DISCUSSION

The incidence of twin pregnancy in this study was about 2.3%, or 1 in 43 deliveries It is lower than the reported rate of 1 in 19 in Ibadan, Western Nigeria[5]. Our rate is however higher than the reported rate of 1 in 47 in Lagos[6], and 1 in 67 or more in Caucasians in Europe and the United States of America[7]. Twinning therefore can be said to be influenced by race and ethnic group. Maternal age and parity have been said to be strongly associated with increased incidence of twinning[3]. This postulation was not substantiated by this study. The small number of patients in this study may be responsible for this feature not manifesting clearly.

Antenatal diagnosis of the twin pregnancy was made in 64 (85.3%) of the patients. Eleven (14.7%) were undiagnosed before labour and delivery, out of which 3 were un-booked patients. A study has reported up to 40% of twin gestations being undiagnosed prior to labour and delivery[8]. The high prenatal detection rate of twin pregnancies in this study could be explained by the liberal use of ultrasound scanning in pregnancy in our antenatal clinic. All booked patients for antenatal care are encouraged to have at least one ultrasound scan in the pregnancy. Ultrasound evaluation of pregnancies has been found to reduce failed diagnosis rate to less than 5%[8].Foetal growth restriction is substantially increased in multiple pregnancies compared with singleton pregnancies.

This is believed to be caused by competition for available recourses by the growing foetuses. This could manifest as complications in the form intrauterine growth restriction, low birth weight, discordant birth weight and/or increased perinatal mortality.

Controversy currently surrounds the generally accepted mode of delivery for some twin pregnancies. Routine caesarean section, however, is not acceptable in all twin pregnancies by most clinicians. The caesarean section rate in this study was 41.3%. This is quite high compared with the caesarean section rate of 15.7% in the hospital within the period of study.

There was no history of ovulation induction in any of the patients in the study. History of previous twin pregnancy in the patients was positive in 6 (8.0%) patients and two (2.7%) patients were themselves twins at birth in the study.

The primary sex ratio, that is, the ratio of boys to girls at birth, is similar worldwide and is about 1.06 boys to 1.0 girls[1]. The sex ratio among the twins was 1.206 boys to 1 .0 girls in the study. This was lower than the documented primary sex ratio for all deliveries worldwide[1]. The reasons for this may be hormonal. Hormones may be responsible for the higher proportion of the male infants in this study. James in 1986 hypothesised that there may be a hormonal control of the sex ratio[9]. Twin pregnancies, which are often associated with raised levels of gonadotrophins are associated with a decrease in the sex ratio[1].

The immediate foetal outcome, (first minute Apgar scores) was not statistically different between the first and second twins. Elective caesarean section in the study was employed for maternal complications like pre-eclampsia, and foetal malpresentation of the first twin, and HIV positivity in pregnancy. The commonest cause of caesarean section in the study was malpresentation of the second twin. This occurred in 30.7% of all the twin pregnancies, that is, breech-breech and breech-cephalic presentations. Emergency caesarean section was the method of delivery for all forms of maternal or foetal distress or compromise in labour.

Spontaneous preterm labour occurs in as many as 30% of twin pregnancies[1]. This was observed in 34.7% of the cases in this study. Our finding is similar to the figure from the United kingdom[1]. The booked patients received increased antenatal supervision, adequate dietary advice and increased rest during the pregnancy. None of the patients was offered cervical cerclage as a prophylactic measure in reducing preterm delivery.

Perinatal mortality was 91 per 1000 deliveries for all the twins. This is lower than the reported rate of 142.6 per 1,000 deliveries in Lagos in 1984[3]. The reason may be that we are reporting the finding a decade later when obstetric practice has improved with the widespread availability of ultrasound scanning machines and therefore earlier diagnosis. The increase in the perinatal mortality, particularly in monozygotic twins is associated with monochorionic twins, where, in at least 85% of cases, there is a vascular connection in the placentae[2]. This may lead to discordant growth, twin to twin transfusion or both. It was not possible to differentiate monozygotic from dizygotic twins in this study.

In conclusion, preterm or premature labour and postpartum haemorrhage were the most common maternal complications of twin pregnancy in Jos University teaching Hospital. Low birth weight and increased perinatal mortality were the most common foetal complications in twin pregnancies in the study. Caesarean section will continue to be a method of delivery in more than 30% of twin pregnancies for abnormal presentations, severe prematurity, and foetal or maternal distress in labour. Because of the obstetric risks of twin pregnancies, these cases should be managed in equipped secondary and tertiary health centres in addition to the availability of trained personnel.

ACKNOWLEDGMENT

We are grateful to the consultant staff of the department for allowing us to use their patients in the study.

REFERENCES

1. **Bromwich P.** The sex ratio and ways of manipulating it. In: John Studd (ed.) Progress in Obstetrics and Gynaecology, Churchill Livingstone, London; Vol. 4, 1984: 217-231.

2. **Blickstein I, Lancet M.** The growth discordant twin. Obstet Gynecol Surv;1988, 43(9): 509-515.

3. **Abudu OO.** Multiple pregnancy. In: A. Agboola (ed.) Textbook of Obstetrics and Gynaecology for Medical Students; Vol. 2. University services Educational Publishers Limited; Lagos, 1988: 131-139.

4 **Weaver JB.** The management of twin pregnancy. In: John Studd (ed.) Progress in Obstetrics and Gynaecology. Churchill Livingstone, London; 1990, Vol. 8: 97-105.

5 **MacGillivray I, Nylander PPS, Corney G.** Human multiple reproduction. WB Saunders Co. Ltd. London, 1975.

6. **Abudu O, Agarin M.** Twin pregnancy and perinatal mortality in Lagos. J Obstet Gyn East Centr Afri. 1984, 3: 7.

7. **Benirschke K,Kim CK.** Multiple pregnancy. 2. N Eng J Med; 1973, 288(25): 1329-1336.

8. **Chervenak FA, Johnson RE, Youcha S et al.** Intrapartum management of twin gestation. Obstet Gynecol; 1985, 65(1): 119-124.

9. **James WH.** Hormonal control of the the sex ration. Journal of Theoretical Biology, 1986, 118: 427-441